REMARKS

The numbering of claims 1-8 have been amended by the above amendments. No substantive changes have been made to the claims, as such no new subject matter has been entered as a result of the above amendments.

Accordingly, it is respectfully requested that the above-noted amendments be entered in the present patent application.

Attached hereto is a marked-up version of the changes made to the claims by current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**".

Respectfully submitted,

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CERTIFICATE OF MAILING

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Jeffrey J. Kapanski — August 16, 2001

Name of Person Making Deposit — Date

VERSION WITH MARKINGS TO SHOW CHANGES MADE

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1.(Amended)[9.] A method for measuring an electrical characteristic on a molecular scale, said method comprising the steps of:

probing a molecular layer using atomic force microscopy (AFM) having a cantilever including a large contact area probe tip by controlling the force applied to said probe tip; and

detecting, in response to said probing, an electrical characteristic of said molecular layer.

2.(Amended) [9.]The method of claim 1, wherein the large contact area probe tip comprises a large radius sphere affixed to the cantilever.

3.(Amended) [10.] The method of claim 1, wherein the step of probing includes varying the force applied to said probe tip.

4.(Amended) [11.] The method of claim 1, wherein said electrical characteristic is at least one selected from the group consisting of: current, voltage, capacitance, conductance, resistance, and impedance.

5.(Amended) [12.] The method of claim 1, wherein the step of detecting includes coupling said molecular layer, said cantilever, and a meter to each other in a circuit.

6.(Amended) [13.] The method of claim 1, wherein the molecular layer is at least one selected from the group consisting of: a self-assembled monolayer, a thin insulator layer deposited on a substrate, a self-assembled multilayer, a Langmuir-Blodgett film, and a supramolecular structure.

7.(Amended) [14.] The method of claim 1, wherein said molecular layer is assembled by at least one technique selected from the group consisting of: ion beam sputtering, ion beam deposition, evaporation, sputtering, physical vapor deposition, chemical vapor deposition, and electrodeposition.

8.(Amended) [15.] A system for measuring an electrical characteristic on a molecular scale, said system comprising:

a molecular layer, subject to having said electrical characteristic thereof measured;

an atomic force microscope (AFM) including a cantilever having a large contact area probe tip for probing said molecular layer; and

a meter coupled to said molecular layer and said cantilever for detecting said electrical characteristic of said molecular layer in response to said probing of said molecular layer.